

G. H. JOHNSON.
Fire-Proof Buildings.

No. 143,351.

Patented September 30, 1873.

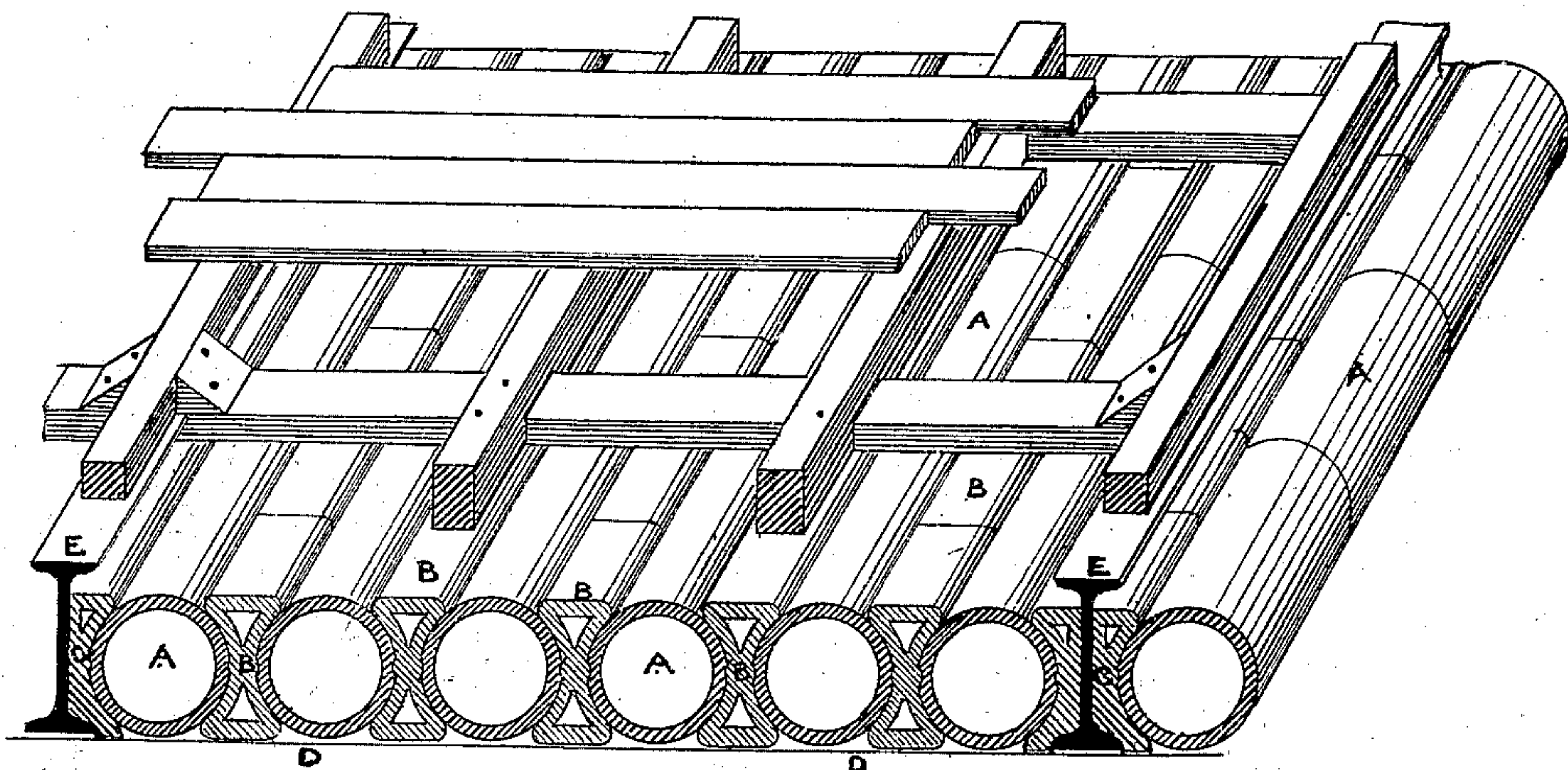


FIG. I.

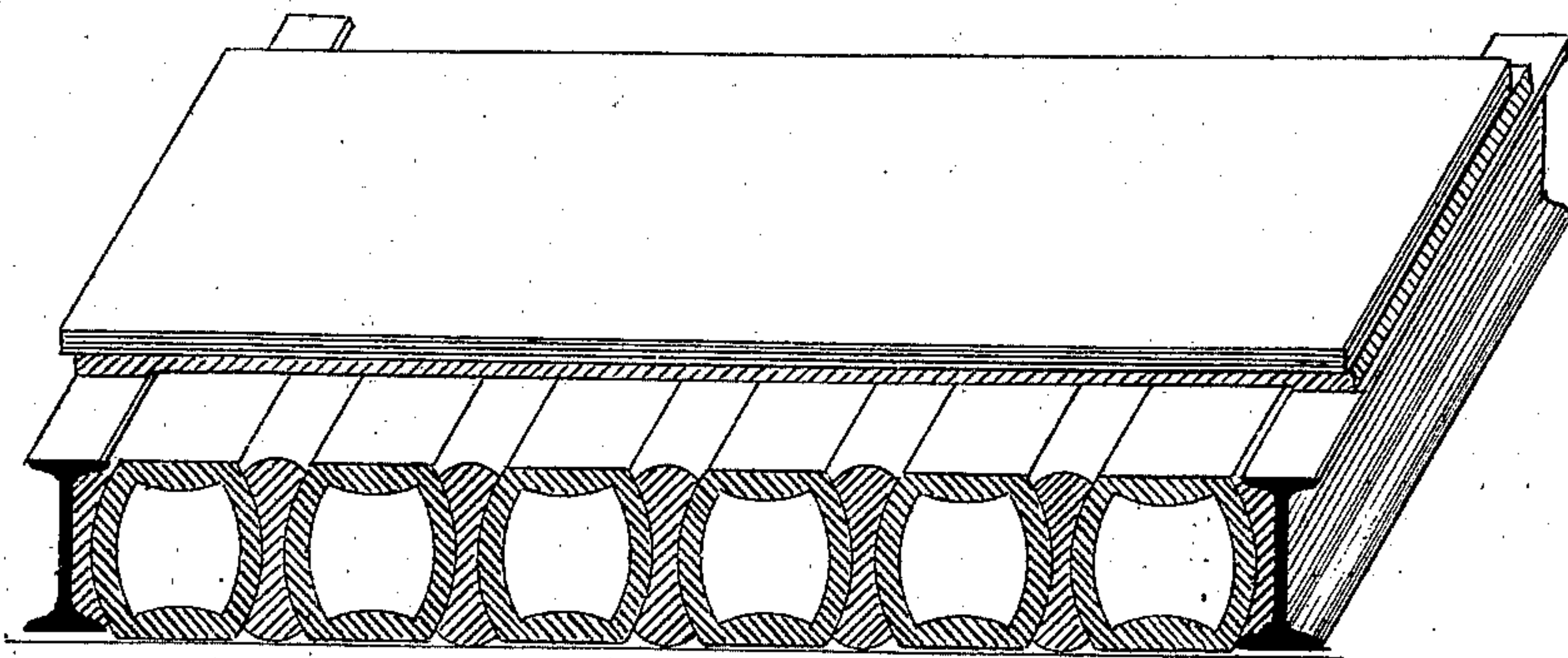


FIG. II.

WITNESSES

Wm. H. Young
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INVENTOR

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UNITED STATES PATENT OFFICE.

GEORGE H. JOHNSON, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO WM. J. FRYER, JR., OF SAME PLACE.

IMPROVEMENT IN FIRE-PROOF BUILDINGS.

Specification forming part of Letters Patent No. **143,351**, dated September 30, 1873; application filed July 14, 1873.

To all whom it may concern:

Be it known that I, GEORGE H. JOHNSON, of New York, in the county and State of New York, have invented an Improvement in the Construction of Fire-Proof Floors, Ceilings, Walls, Partitions, and Roofs; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 represents an isometrical view in section of a floor and ceiling constructed after my plan, and supported by wrought-iron beams. Fig. 2 represents a similar view of my floor and ceiling constructed on the same principle, but in a different form.

I will describe all that is necessary to a full understanding of my invention, and then clearly point it out in the claim.

The great aim of myself and other engineers in constructing floors and ceilings fire-proof, has been to devise some method in order to reduce the great weight on the floors, walls, and foundations, (unavoidable when the old and unsightly brick arch and concrete filling on top are used,) and to produce a level ceiling, in order to save the furring down with iron lath, which is very costly and heavy. This I have accomplished in my former inventions, for which patents were issued, but not so perfect, strong, light, and cheap, as the method I now claim and describe.

I form my floors and ceilings with a series of hollow cylinders, A A, made of fire-clay, burnt, (or other incombustible material,) which I hold in rigid position with double and single concave binders or clamps B B C C, arranged so as to break joints. The interstices between the cylinders and binders are filled up with a liquid cement, thus forming, between the iron beams E E, and resting thereon, a perfect hollow slab of great strength and lightness, only weighing one-quarter the weight of a solid

brick arch and concrete filling, and one-third lighter than the hollow tiles used in my previous invention, and much cheaper and stronger, for the reason that all parts are of equal thickness; and, being cylindrical, I avoid tensile strain on the material, and throw the whole weight on the compressive strength of the hollow cylinders, which form perfect arches in themselves, every inch being equal in strength to resist the pressure brought to bear thereon.

This construction provides a flat level ceiling, and floor above, with the additional advantage (not before achieved) of producing a corrugated ceiling, D D, to form a perfect key for the plastering and hard finish.

The binders C C, resting on the iron beams E E, are formed to fit the upper and lower flanges, and made concave on the other side, to receive the first cylinder.

In Fig. 2 another form is represented, which shows that with the use of the binders I am able to use various other shapes of hollow tubes; but I prefer the cylindrical form, as being the lightest and cheapest.

For partitions, &c., I use the same shaped series of hollow cylinders and concave binders, arranged so as to break joints, the corrugated sides forming a perfect key for the plastering and finishing coats.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination of a series of hollow cylinders, A A, made of fire-clay or other non-combustible material, and held in position and supported by the double and single concave binders or clamps B B C C, made of the same material, all as shown and described, for the purposes specified.

GEO. H. JOHNSON.

Witnesses:

WM. W. YOUNG,
HARDESTY DE S. JOHNSON.